

IN THE CLAIMS

1. **(currently amended)** An apparatus for compensating for dispersion, comprising:

a wavelength-selective optical switching unit which receives at one input port thereof a signal into which a plurality of wavelengths are multiplexed, and demultiplexes the signal so as to output each of the demultiplexed wavelengths at respective desired output ports while switching routes of the demultiplexed wavelengths leading to the output ports;

a plurality of dispersion compensation units which are connected to the respective output ports, and have respective, different dispersion values; and

a multiplexing unit which receives at a plurality of input ports thereof the demultiplexed wavelengths output from said dispersion compensation units, and multiplexes the demultiplexed wavelengths to generate a signal,

wherein at least one of the dispersion values for a respective one of the demultiplexed wavelengths is set to an optimal value in accordance with a transmission path length at a time a transmission path is switched for the respective demultiplexed wavelength.

2. (original) The apparatus for compensating for dispersion as claimed in claim 1,

wherein said wavelength-selective optical switching unit further includes a specific output node that is not connected to the dispersion compensation units, and outputs a specific demultiplexed wavelength from the specific output port.

3. (original) The apparatus for compensating for dispersion as claimed in claim 1,

wherein said multiplexing unit receives a specific wavelength from a specific input port among the plurality of input ports and multiplexes said specific demultiplexed wavelength into a plurality of demultiplexed wavelengths output by said plurality of dispersion compensation units.

4. (currently amended) An apparatus for compensating for dispersion, comprising:

an optical circulating unit which includes a first port, a second port and a third port, and which receives at the first port a first signal into which a plurality of wavelengths is multiplexed so as to output from the second port the first signal, and receives a second signal at the second port so as to output from the third port the second signal;

a wavelength-selective optical switching unit which receives from said second port and at one input port a signal into which said plurality of wavelengths are multiplexed and demultiplexes the signal so as to output each of the demultiplexed wavelengths at respective desired output ports while switching routes of the demultiplexed wavelengths leading to the output ports; and

a plurality of dispersion compensation units which are connected to the respective output ports of said wavelength-selective optical switching unit, and have respective, different dispersion compensation values; and

a plurality of reflecting units which reflect and return output light at end section of said respective dispersion compensation units,

wherein at least one of the dispersion compensation values for a respective one of the demultiplexed wavelengths is set to an optimal value in accordance with a transmission path length at a time a transmission path is switched for the respective demultiplexed wavelength.

5. (original) A wavelength division multiplexing communications system,
wherein the apparatus for compensating for dispersion as claimed in claim 1 is provided
along an optical transmission line.

6. (original) An apparatus for compensating for dispersion as claimed in claim 1,
wherein the respective dispersion compensation units are set to have the dispersion
compensation values at regular intervals.

7. (original) The apparatus for compensating for dispersion as claimed in claim 1,
wherein the multiplexing unit comprises a wavelength-selective optical switching unit which
receives at the plurality of input ports thereof the demultiplexed wavelengths and multiplexes
said demultiplexed wavelengths so as to output the signal at the output port while switching the
routes of the demultiplexed wavelengths leading to the output port; and comprising
an optical loss adjusting unit which variably adjusts an optical loss of the respective
demultiplexed wavelengths from the respective input ports to said one output port.

8. (original) An apparatus for compensating for dispersion, comprising
a plurality of apparatuses for compensating for dispersion, each of which has an identical
structure to the apparatus for compensating for dispersion as claimed in claim 6; and
a different dispersion compensation value, per apparatus for compensating for dispersion,
which is set at regular intervals in the dispersion compensation units within each of the apparatus
for compensating for dispersion.

9. (original) An apparatus for compensating for dispersion as claimed in claim 1, wherein said wavelength-selective optical switching unit includes

- a first diffraction device which spectroscopes input light;
- a plurality of mirrors which switch routes of wavelengths spectroscoped by said diffraction device; and
- a second diffraction device which receives from said plurality of mirrors the spectroscoped wavelengths and multiplexes the spectroscoped wavelengths.

10. (original) A wavelength division multiplexing communications system, comprising a plurality of apparatuses for compensating for dispersion at different locations along an optical transmission line, said plurality of apparatuses for compensating for dispersion being each identical to the apparatuses for compensating for dispersion of claim 8.